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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,930	12/26/2001	Alistair I. Goudie	34260	4501
116	7590	05/03/2004	EXAMINER	
			PHAN, RAYMOND NGAN	
		ART UNIT		PAPER NUMBER
		2111		9
DATE MAILED: 05/03/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/035,930	GOUDIE	
	Examiner Raymond Phan	Art Unit 2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 October 2002.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 18-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 18-37 is/are rejected.
- 7) Claim(s) 38-42 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____ .
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ |

Part III DETAILED ACTION

Notice to Applicant(s)

1. This action is responsive to the following communications: pre-amendment filed on October 3, 2002.
2. This application has been examined. Claims 18-42 are pending.
2. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 2111.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence

Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification

should refer to another patent or readily available publication which adequately describes the subject matter.

- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (k) Sequence Listing: See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Objections

4. Claims 22 and 27 are objected

As per claim 22 (page 2, line 1), claim 37 (page 4, line 1), using the acronym, “QMS”, is not defined in claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 18-21 are rejected under 35 U.S.C. § 102(b) as being anticipated by Miller et al. (US No. 5,784,569).

In regard to claim 18, Miller et al. disclose an arbiter for a system having multiple bus masters each having real time requirements for mastership of a bus (see col. 3, lines 8-21), wherein the arbiter is arranged so that the amount of time that each bus master can gain bus access is a percentage of the total bus time (see col. 2, line 58 through col. 3, line 38).

In regard to claims 19, 21, Miller et al. disclose further comprising means for allocating priority levels for bus mastership when a given bus master does not request bus mastership during its allocated percentage of the total bus time (see col. 6, line 63 through col. 8, line 14).

In regard to claim 20, Miller et al. disclose a bus (see col. 4, lines 26-47); a plurality of bus masters each having real time requirements for mastership of the bus (see col. 3 lines 8-21), and an arbiter for allocating bus mastership to the bus masters as a percentage of the total bus time (see col. 2, line 58 through col. 3, line 38).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as

a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 22-37 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller et al. in view of Brash et al. (US No. 5,485,586).

In regard to claim 22, Miller et al. disclose an arbiter for a system having multiple bus masters each having real time requirements for mastership of a bus (see col. 3, lines 8-21), wherein the arbiter is arranged so that the amount of time that each bus master can gain bus access is a percentage of the total bus time (see col. 2, line 58 through col. 3, line 38). But Miller et al. do not specifically disclose the queue management system (QMS hereinafter) supporting a plurality of queue users. However Brash et al. disclose the queue-based arbitration system supporting a plurality of queue users (see col. 2, lines 20-25). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Brash et al. within the system of Miller et al. because it would provide fair access to a system bus while eliminating the need for maintaining a history of previous bus transactions.

In regard to claims 23, Miller et al. disclose further comprising means for allocating priority levels for bus mastership when a given bus master does not request bus mastership during its allocated percentage of the total bus time (see col. 6, line 63 through col. 8, line 14).

In regard to claim 24, Brash et al. disclose wherein the queue-base arbitration system includes a queue portal for each of the queue users, a respective queue user interface being positioned between each queue user and its portal (see col. 3, line 61 through col. 4, line 10). Therefore, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have combined the teachings of Brash et al. within the system of Miller et al. because it

would provide fair access to a system bus while eliminating the need for maintaining a history of previous bus transactions.

In regard to claim 25, Brash et al. disclose a memory for storing data as it passes through the queues (see col. 3, line 7 through col. 4, line 11), and wherein one of the queue users is a processor (see col. 1, lines 51-55). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined the teachings of Brash et al. within the system of Miller et al. because it would provide fair access to a system bus while eliminating the need for maintaining a history of previous bus transactions.

In regard to claims 26, 33, Miller et al. disclose the arbiter including a state machine (i.e. transmission cycle) for allocating to each bus master its percentage of the total bus time (see col. 4, line 66 through col. 5, line 67).

In regard to claims 27, 34, Miller et al. disclose the transmission cycle determining the active queue portal arbitration by cycling through a predetermined number of states, in fixed order, each of the states being associated with a respective queue portal (see col. 5, line 1 through col. 6, line 51).

In regard to claims 28, 35, Miller et al. disclose wherein the percentage of total bus time allocated to a given requesting device is determined by a total number of states associated with the given request corresponding to the requesting device (see col. 5, line 1 through col. 6, line 51).

In regard to claims 29, 36, Miller et al. disclose wherein, when a given state is given is active and the given requesting device corresponding to the request associated with the given state does not request bus mastership, then means for allocating priority levels for bus mastership is activated (see col. 6, line 63 through col. 8, line 14).

In regard to claim 30, Miller et al. disclose wherein the arbiter allocates the highest priority level to bus accesses by a non-interruptible memory sequence (see col. 7, line 13 through col. 8, line 16).

In regard to claim 31, Miller et al. disclose wherein the arbiter allocates the second highest priority level to bus accesses (see col. 8, lines 19-45).

In regard to claim 32, Miller et al. disclose wherein the arbiter allocates the third highest priority level to bus accesses (see col. 8, line 29 through col. 9, line 3).

In regard to claim 37, Miller et al. disclose an arbiter for a system having multiple bus masters each having real time requirements for mastership of a bus (see col. 3, lines 8-21), wherein the arbiter is arranged so that the amount of time that each bus master can gain bus access is a percentage of the total bus time (see col. 2, line 58 through col. 3, line 38); the arbiter including a state machine (i.e. transmission cycle) for allocating to each bus master its percentage of the total bus time (see col. 4, line 66 through col. 5, line 67); the transmission cycle determining the active queue portal arbitration by cycling through a predetermined number of states, in fixed order, each of the states being associated with a respective queue portal (see col. 5, line 1 through col. 6, line 51); wherein the percentage of total bus time allocated to a given requesting device is determined by a total number of states associated with the given request corresponding to the requesting device (see col. 5, line 1 through col. 6, line 51); wherein, when a given state is given is active and the given requesting device corresponding to the request associated with the given state does not request bus mastership, then means for allocating priority levels for bus mastership is activated (see col. 6, line 63 through col. 8, line 14). But Miller et al. do not specifically disclose the queue management system (QMS

hereinafter) supporting a plurality of queue users. However Brash et al. disclose the queue-based arbitration system supporting a plurality of queue users (see col. 2, lines 20-25). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined the teachings of Brash et al. within the system of Miller et al. because it would provide fair access to a system bus while eliminating the need for maintaining a history of previous bus transactions.

Allowable Subject Matter

9. Claims 38-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is an Examiner's statement of reasons for the indication of allowable subject matter: Claims 38-42 are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior arts which teach a BLUETOOTH baseband peripheral comprising a re-usable microprocessor block; a link control hardware for communication with Bluetooth devices via a radio IC and a QMS system; and an interface block between the bus and the re-usable microprocessor block, the queue users comprising communication control block, a host queue user, a voice encoder and decoder, and a processor forming part of the re-usable microprocessor block, wherein each of the queue users is connected to the bus via its queue user interface and a respective bus master and bus tri-state driver.

Conclusion

11. Claims 18-37 are rejected. Claims 38-42 are objected.

12. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure.

Sato et al. (US No. 5,583,999) disclose a bus arbiter and bus arbitrating method.

Azevedo et al. (US No. 4,969,120) disclose a data processing system for time-shared access to a time slotted bus.

Jacobs et al. (US No. 6,385,678) disclose a method and apparatus for bus arbitration with weighted bandwidth allocation.

Jeddeloh (US No. 6,363,445) discloses a method of bus arbitration using requesting device bandwidth and priority ranking.

O'Connell et al. (US No. 5,241,632) disclose a programmable priority arbiter.

Svensson et al. (WO No. 94/09437) disclose a signal handling system with a shared data memory.

Jacobs et al. (WO No. 98/12645) disclose a method and apparatus for bus arbitration with weighted bandwidth allocation.

Blackledge et al. (EPO No. 0675445A2) disclose a bus allocation in a computer system.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Raymond Phan, whose telephone number is (703) 306-2756. The examiner can normally be reached on Monday-Friday from 6:30AM- 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Primary, Paul Myers can be reached on (703) 305-9656 or via e-mail addressed to paul.myers@uspto.gov. The fax phone number for this Group is (703) 872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [raymond.phan@uspto.gov].

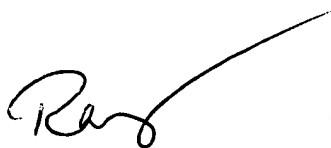
All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver

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of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Raymond Phan
4/27/04